



## DECLARATION

I, Gon Seo, am the applicant in Serial No. 10 535 153 and hereby declare that:

I have reviewed the specification, including the claims, of Serial No. 10535 153, the Office action mailed March 18, 2010, and U.S. 6,638,501, Tomihisa et al. ("Tomihisa"), cited by the examiner;

Based on my review of Tomihisa, I have concluded that the products disclosed in Tomihisa are not the same as the three dimensional network of silica particles according to the present claims in the above application. Based on my review, I have also concluded that the three dimensional network of silica particles according to the present claims in the above application are not obvious variants of the products disclosed in Tomihisa;

The "three-dimensional network" disclosed in col. 6 of Tomihisa refers to the configuration of atoms, not particles. There is nothing in Tomihisa that teaches that the inorganic fine particles are in a three dimensional network. Furthermore, the inorganic fine particles of the reference are not connected to each other by bridge chains containing carbon and hydrogen atoms;

Silica particles are not used as a starting material for the inorganic fine particle or the compound fine particle of Tomihisa. The lists of metallic compounds do not include silica. The inorganic silica fine particles are generated by hydrolysis-condensation of the alkoxysilane groups on the polymers alone or together with a metallic compound of the formula  $(RO)MR_1$ . As illustrated hereafter, the general reaction sequence of hydrolysis and condensation of the organic polymer results in inorganic fine particle aggregates in the compound fine particles;

A three dimensional network of silica particles is not formed if a polymeric material is used as the material bonded to the silica particle because of the steric effects of the size of the polymeric material. The size of the polymeric material is much larger than the size of bridge chains which are derived from alkoxy silane coupling agents and specified difunctional connecting materials;

The silica particles in the claimed network are not aggregated (paragraph [0027], lines 17+ of the published application). In the three dimensional network of silica particles of Applicant's claims, the silica particles are interconnected in a three dimensional network by bridge materials as illustrated by Fig. 1 of the above application;

Polymers such as those disclosed in Tomihisa would not produce the three dimensional networked silica particles of the present claims because the reference teaches that the polymers do not bond with colloidal silica particles. Based on my technical review of the disclosure, including the examples, of Tomihisa, I have concluded that the polymer chains have a masking effect on the inorganic fine particles which would prevent the formation of three dimensional networks of the inorganic fine particles or compound fine particles;

The three dimensional network according to the present claims provides voids and openings to entangle rubber molecule when the networked silica particles are used in rubber compositions. The polymer chains in Tomihisa would be expected to prevent formation of a three dimensional network of the inorganic fine particles because of steric effects of the long chains which mainly cover the inorganic fine particles;

The reaction sequence on the following pages illustrates the general hydrolysis and condensation reactions in Tomihisa. The sequence follows the sequence in Tomihisa's examples beginning with the preparation of a polymerizable polysiloxane, S, and the use of this product to produce the organic polymer, P, and then hydrolysis and condensation reactions for preparation of the compound fine particles;

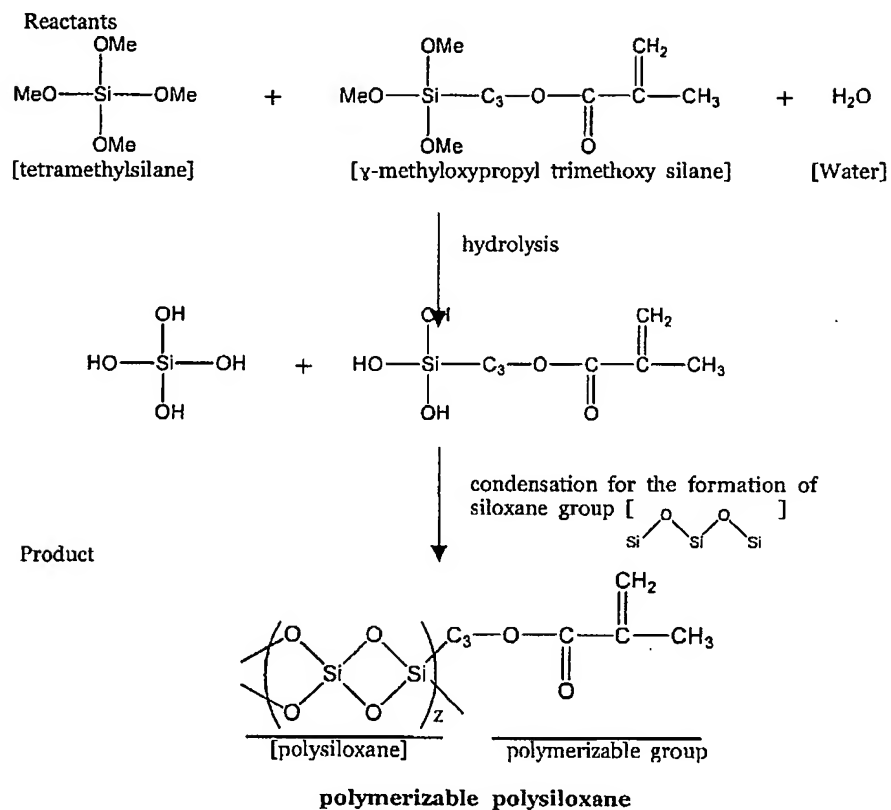
Based on my review of Tomihisa, I have concluded that the use of the organic polymer results in silica aggregates in the compound fine particles. The silica particles in the presently claimed network are not aggregated (paragraph [0027], lines 17+ of the published application). In the three dimensional network of silica particles of the present claims, the silica particles are interconnected by bridge chains as illustrated by Fig. 1 of the above application.

The three dimensional network of silica particles according to the present claims results from the use of silica particles as the starting material which are then reacted with organic bridging materials comprised of carbon and hydrogen. The network formed among the silica particles prevent their aggregation (paragraph [0020]);

The bridge chains of the claimed networks are comprised of carbon and hydrogen. As shown in the following reaction sequence, the aggregated inorganic fine particles of Tomihisa are bonded by silicon-oxygen bonds which do not contain either carbon or hydrogen;

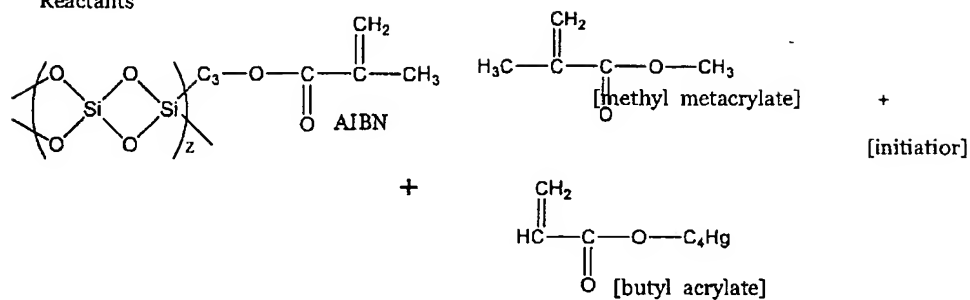
# Generalized Reaction Sequence per Examples of Tomihisa

## I. Preparation of polymerizable polysiloxane [S-1 ~ S-4]

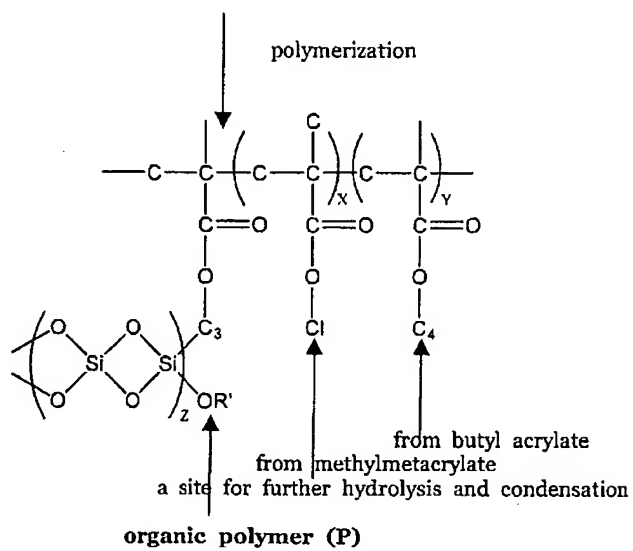


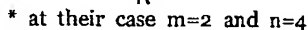
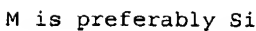
## II. Preparation of organic polymer [P-1 ~ P-14]

Reactants



Product





aggregated silica fine particles with Si-O bonds

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity or the application or any patent issuing thereon.

June 25, 2010

Date

Seo Gon

Gon SEO